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liver, has a molecular weight of 19 ± 5 kDa as determined by gel filtration or nonreducing SDS-PAGE, has a pI of 4.8 ± 1.0 as determined by chromatofocusing, and induces the production of IFN-γ by immunocompetent cells,

and wherein the amino acid sequence of the IGIF is encoded by a murine cDNA which hybridized to a probe having the coding sequence shown in SEQ ID NO:1 at 60°C in a solution of 5x SSPE, 5x Denhardt's solution, and 0.5% (w/v) SDS, and 100 μg/ml denatured salmon sperm DNA.--

--60. A monoclonal antibody according to claim 59, wherein the IGIF protein comprises the amino acid sequences shown as residues 26-43 and 79-103 of SEQ ID NO:2.--

--61. A monoclonal antibody according to claim 59 which is IgG or IgM class antibody.--

--62. An antibody according to claim 59, which is labeled with a labeled with a radiolabel, an enzyme, or a fluorophore.--

--63. An antibody according to claim 59, which is capable of inhibiting the biological activity of an IGIF protein.--

--64. A hybridoma which produces a monoclonal antibody according to claim 59.--

--65. A method for producing a monoclonal antibody which comprises culturing a hybridoma according to claim 64 *in vitro* or *in vivo* under conditions suitable to promote production of the antibody and recovering the antibody so

produced.--

--66. A method according to claim 65, further comprising the step of subjecting the antibody to one or more processes selected from the group consisting of salting out, dialysis, filtration, concentration, centrifugation, separatory sedimentation, gel filtration chromatography, ion exchange chromatography, HPLC, affinity chromatography, gel electrophoresis, and isoelectric focusing.--

--67. A method of inhibiting the biological activity of an IGIF protein, comprising the step of contacting an antibody according to claim 63 with the IGIF protein.--

--68. A method according to claim 67, wherein the IGIF protein has the amino acid sequence shown in SEQ ID NO:2, wherein Xaa is Met or Thr.--

--69. A method for determining the presence of an IGIF protein or polypeptide in a sample, comprising the steps of:

contacting a sample suspected to contain an IGIF protein or polypeptide with an antibody according to claim 59 under conditions suitable to promote the specific binding of the antibody to IGIF to form an immune complex; and

detecting any such immune complex which is formed.--

--70. A method according to claim 69, wherein the antibody is immobilized on ~~an~~ a solid insoluble matrix or substrate.--

--71. A method according to claim 70, further comprising the step of quantitating the amount of IGIF protein present in the sample.--

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--72. A method according to claim 69, wherein the antibody is labeled with a radiolabel, an enzyme, or a fluorophore.--

--73. A method according to claim 69, wherein the IGIF protein has the amino acid sequence shown in SEQ ID NO:2, wherein Xaa is Met or Thr.--

--74. A method for purifying an IGIF protein or polypeptide from a sample containing other components, comprising the steps of:

contacting the sample with a monoclonal antibody according to claim 59 under conditions suitable to promote the specific binding of the antibody to IGIF protein to form an immune complex; and

separating the immune complex from at least one of the other components in the sample.--

--75. A method according to claim 74, further comprising the step of recovering the IGIF protein or polypeptide from the immune complex.--

--76. A method according to claim 74, wherein the antibody is immobilized on a water insoluble matrix.--

--77. A method according to claim 76, wherein the contacting is effected by applying the sample to a chromatography column comprising the matrix.--

--78. A method according to claim 77, further comprising the step of recovering the IGIF protein or polypeptide from the chromatography column.--

--79. A method according to claim 78, wherein the

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IGIF protein is recovered in nearly quantitative yield and with a purity of at least 95%.--

--80. A method according to claim 74, wherein the IGIF protein has the amino acid sequence shown in SEQ ID NO:2, wherein Xaa is Met or Thr.--

--81. A monoclonal antibody which specifically recognizes a polypeptide having the amino acid sequence shown in SEQ ID NO:2, wherein Xaa is Met or Thr.--

--82. An antibody according to claim 81, which is capable of inhibiting the biological activity of an IGIF protein.--

--83. A method for determining the presence of an IGIF protein or polypeptide in a sample, comprising the steps of:

contacting a sample suspected to contain an IGIF protein or polypeptide with an antibody according to claim 81 under conditions suitable to promote the specific binding of the antibody to IGIF to form an immune complex; and

detecting any such immune complex which is formed.--

--84. A method for purifying an IGIF protein or polypeptide from a sample containing other components, comprising the steps of:

contacting the sample with a monoclonal antibody according to claim 81 under conditions suitable to promote the specific binding of the antibody to IGIF to form an immune complex; and

separating the immune complex from at least one of

the other components in the sample.--

--85. A polyclonal antibody which specifically recognizes a polypeptide having the amino acid sequence shown in SEQ ID NO:2, wherein Xaa is Met or Thr.--

--86. A polyclonal antibody which specifically recognizes an interferon-gamma (IFN-γ) inducing factor (IGIF) protein or polypeptide, prepared by a process comprising:

immunizing a mammal with a protein having the amino acid sequence shown in SEQ ID NO:2, wherein Xaa is Met or Thr, or with an antigenic peptide fragment thereof, and

recovering the antibody from the mammal.--

--87. An antibody according to claim 86, which is capable of inhibiting the biological activity of an IGIF protein.--

--88. A method for determining the presence of an IGIF protein or polypeptide in a sample, comprising the steps of:

contacting a sample suspected to contain an IGIF protein or polypeptide with an antibody according to claim 86 under conditions suitable to promote the specific binding of the antibody to IGIF to form an immune complex; and

detecting any such immune complex which is formed.--

REMARKS

The amendments to the claims are being made to place the claims in better condition for examination.